REMARKS

This Amendment responds to the Office Action dated June 13, 2006 in which the Examiner required a new title, objected to claims 1-11, rejected claims 1-2, 4, 7 and 11 under 35 U.S.C. §102(b), rejected claims 5 and 8 under 35 U.S.C. §103 and objected to claims 3, 6, 9 and 10 as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

As indicated above, a new title has been provided. Therefore, Applicants respectfully request the Examiner approves the new title.

As indicated above, the claims have been amended in order to correct minor informalities. Therefore, Applicants respectfully request the Examiner withdraws the objection to claims 1-11.

As indicated, claim 1 has been amended in order to make explicit what is implicit in the claim. The amendment is unrelated to a statutory requirement for patentability and does not narrow the literal scope of the claim. Claims 2-9 and 11 have been amended to correspond to claim 1. The amendment is unrelated to a statutory requirement for patentability and does not narrow the literal scope of the claims.

Claim 1 claims a thin-film magnetic head comprising an insulation gap, a yoke, at least one coil conductor and at least one conductive metal layer. The yoke has first and second magnetic poles separated from each other by the insulation gap. The at least one coil conductor is wound around the yoke by a plurality of turns. The at least one conductive metal layer is arranged near the at least one coil conductor in parallel with a plane of the at least one coil conductor, for producing

current flowing there through. The current is induced by alternating current flowing through the at least one coil conductor.

Through the structure of the claimed invention having at least one conductive metal layer producing current induced by alternating current flowing through the at least one coil conductor, as claimed in claim 1, the claimed invention provides a thin-film magnetic head in which inductance of the coil conductor can be reduced while keeping a shape and size of the coil conductor, i.e., the peak of the input impedance of the coil conductor can be shifted to a higher frequency side so that it is possible to flow a write current having a short rise time and high current value through the coil conductor while maintaining the profile of the rectangular wave shape input pulses as much as possible. The prior art does not show, teach or suggest the invention as claimed in claim 1.

Claims 1-2, 4, 7 and 11 were rejected under 35 U.S.C. §102(b) as being anticipated by *Stover et al.* (U.S. Patent 5,198,948).

Stover et al. appears to disclose improved passive noise cancellation in the servo heads by the use of shielding of servo heads, data heads, or both. (Column 1, lines 8-10). Transducer 62 includes lower shield 92 and upper shield 94. Lower shield 92 is typically a planar shield formed of laminated layers of permalloy and gold and is located adjacent base coat 86. Upper shield 94 is also typically a planar shield made of laminated layers of permalloy and gold and is positioned on top of overcoat 90. Upper shield 94 and lower shield 92 are typically between 0.5 μm and 10 μm thick. This is generally the needed thickness determined by the strength of the extraneous signal and the electromagnetic blocking capability of the shield material selected. Both lower shield 92 and upper shield 94 are preferrably essentially

impermeable to electromagnetic radiation and block extraneous electromagnetic radiation originating outside of transducer 62 from reaching coil conductor 64. Shields 92 and 94 can be made of any number of suitable materials. Since shields 92 and 94 should shield against both AC noise and noise created by magnetic flux, it is preferred, though not required, that the shields are made of layers of magnetically permeable material and electrically conductive material. Some suitable magnetically permeable materials are NiFe alloys, NiFeCr, and FeCo. Some suitable electrically conductive materials are Cu, Ag and Au. The thickness of each shield is approximately between 5 μm and 10 μm. (Column 5, lines 3-28). FIG. 9 shows a cross sectional view of a transducer 62 having lower shield 92 and upper shield 94 positioned adjacent insulating material 88. In this embodiment, the upper and lower shields 92 and 94 extend to essentially completely cover that portion of coil conductor 64 which is not surrounded by pole pieces 66 and 68. As in the embodiment of FIGS. 7 and 8, the shields shown in FIG. 9 act to block extraneous electromagnetic radiation and prevent extraneous radiation from reaching coil conductor 64. FIG. 10 is a perspective view of the preferred embodiment shown in FIG. 9. In FIG. 10, the extent to which lower shield 92 and upper shield 94 cover coil conductor 64 is clearly evident. As in FIG. 8, substantially covers the entire conductor coil 64 is shielded. (Column 5, lines 39-55).

Thus, *Stover et al.* merely discloses upper and lower shields 92, 94 provided to shield a transducer from electromagnetic radiation. Nothing in *Stover et al.* shows, teaches or suggests the conductive metal layer producing current induced by alternating current flowing through at least one coil conductor as claimed in claim 1.

Rather, *Stover et al.* merely discloses lower and upper shields 92, 94 provided to shield a transducer from electromagnetic radiation.

Additionally, *Stover et al.* merely discloses that upper and lower shields 92, 94 are made of magnetic metal material such as permalloy. However, as claimed in claim 1, since current is generated to flow through a metal layer, the metal layer is made of a conductive metal layer with high electrical conductivity. However, *Stover et al.* teaches away from the claimed invention since the lower and upper shields 92, 94 are made of a magnetic metal material and not a conductive metal layer.

Since nothing in *Stover et al.* shows, teaches or suggests a) a conductive metal layer and b) producing current induced by alternating current flowing through at least one coil conductor in a conductive metal layer as claimed in claim 1, Applicants respectfully request the Examiner withdraws the rejection to claim 1 under 35 U.S.C. §102(b).

Claims 2, 4, 7 and 11 depend from claim 1 and recite additional features. Applicants respectfully submit that claims 2, 4, 7 and 11 would not have been anticipated by *Stover et al.* within the meaning of 35 U.S.C. §102(b) at least for the reasons as set forth above with respect to claim 1. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 2, 4, 7 and 11 under 35 U.S.C. §102(b).

Claim 5 was rejected under 35 U.S.C. §103 as being unpatentable over *Stover et al.* in view of *Brug et al.* (U.S. Patent 5,930,087). Claim 8 was rejected under 35 U.S.C. §103 as being unpatentable over *Stover et al.* and *Official Notice.*

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103. The claims have been reviewed in light of the Office Action, and for

reasons which will be set forth below, Applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

As discussed above, since nothing in *Stover et al.* shows, teaches or suggests the primary features as claimed in claim 1, Applicants respectfully submit that the combination of the primary reference with the secondary reference to *Brug et al.* or *Official Notice* will not overcome the deficiencies of the primary reference. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 5 and 8 under 35 U.S.C. §103.

Since objected to claims 3, 6, 9 and 10 depend from allowable claims, Applicants respectfully request the Examiner withdraws the objection thereto.

Thus, it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is requested to contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, Applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: September 13, 2006 By:

Ellen Marcie Emas
Registration No. 32131

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620